

EXHIBIT 1

THE CELL

A MOLECULAR APPROACH
SECOND EDITION

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The Cover

A nuclear pore complex (center) is shown with the cytoplasm above and the nucleus below. The illustration includes all macromolecules, including ribosomes (purple) and actin filaments (blue) in the cytoplasm, and DNA double helices (red) being transcribed into messenger RNA (white) in the nucleus. Illustration by David S. Goodsell, The Scripps Research Institute.

Part One opener image

Confocal micrograph of mouse embryo cells.
(Courtesy of David Albertini, Tufts University School of Medicine)

Part Two opener image

Light micrograph of stained salivary gland polytene chromosomes in *Drosophila*.
(Peter J. Bryant/Biological Photo Service)

Part Three opener image

Micrograph of macrophages ingesting red blood cells.
(Courtesy of Joel Swanson)

Part Four opener image

Fluorescence micrograph of the telophase stage of mitosis in newt lung cells.
(Conly L. Rieder/Biological Photo Service)

The Cell: A Molecular Approach, Second Edition

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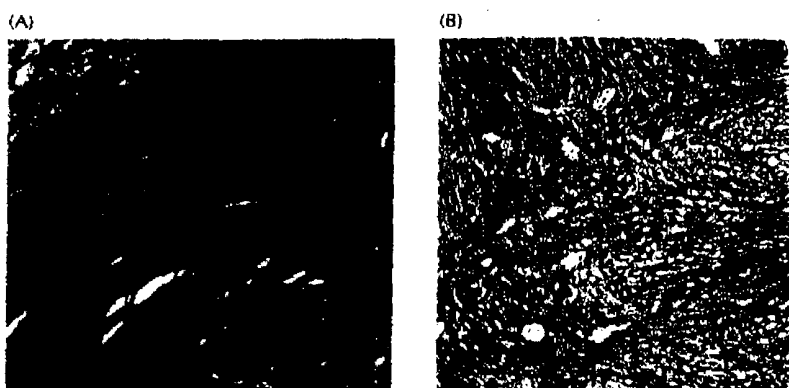
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Figure 15.1

A malignant tumor of the uterus
Micrographs of normal uterus (A) and a section of a uterine sarcoma (B). Note that the cancer cells (darkly stained) have invaded the surrounding normal tissue. (Cecil Fox/Molecular Histology, Inc.)

**Types of Cancer**

Cancer can result from abnormal proliferation of any of the different kind of cells in the body, so there are more than a hundred distinct types of cancer, which can vary substantially in their behavior and response to treatment. The most important issue in cancer pathology is the distinction between benign and malignant tumors (Figure 15.1). A **tumor** is any abnormal proliferation of cells, which may be either benign or malignant. A **benign tumor**, such as a common skin wart, remains confined to its original location, neither invading surrounding normal tissue nor spreading to distant body sites. A **malignant tumor**, however, is capable of both invading surrounding normal tissue and spreading throughout the body via the circulatory or lymphatic systems (**metastasis**). Only malignant tumors are properly referred to as cancers, and it is their ability to invade and metastasize that makes cancer so dangerous. Whereas benign tumors can usually be removed surgically, the spread of malignant tumors to distant body sites frequently makes them resistant to such localized treatment.

Both benign and malignant tumors are classified according to the type of cell from which they arise. Most cancers fall into one of three main groups: carcinomas, sarcomas, and leukemias or lymphomas. **Carcinomas**,

Common Cancers in the United States		
Cancer site	Cases per year	Deaths per year
Breast	184,200 (15.1%)	41,200 (7.5%)
Prostate	180,400 (14.8%)	31,900 (5.8%)
Lung	164,100 (13.4%)	156,900 (28.4%)
Colon/rectum	130,200 (10.7%)	56,300 (10.2%)
Lymphomas	62,300 (5.1%)	27,500 (5.0%)
Bladder	53,200 (4.4%)	12,200 (2.2%)
Uterus	48,900 (4.0%)	11,100 (2.0%)
Skin (melanoma)	47,700 (3.9%)	7,700 (1.4%)
Kidney	31,200 (2.6%)	11,900 (2.2%)
Leukemias	30,800 (2.5%)	12,100 (2.2%)
Subtotal	933,000 (76.5%)	368,800 (66.8%)
All sites	1,220,100 (100%)	552,200 (100%)

Source: American Cancer Society, *Cancer Facts and Figures—2000*.